

Serial No. 09/202,549

Inventor: Tsichlis

Title: Nucleic Acid Molecule for
Enhancing Gene Expression



A	40
C	32/32
A	40
A	39
A	35
A	30
T	35/40
A	73
A	100
A	100
A	100
T	100
C	69
A	53
C	38/44
G	75
C	57
A	39
T	35
A	31
T	38
G	38
C	35
C	33

Figure 1

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Inventor: Tsiichlis

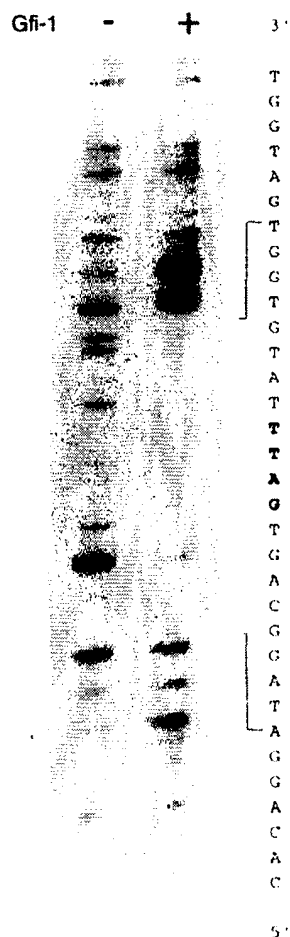
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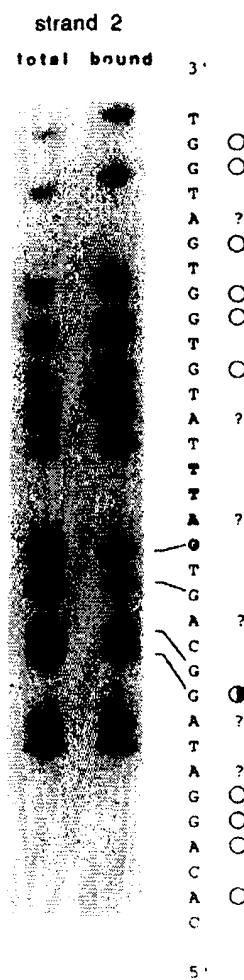
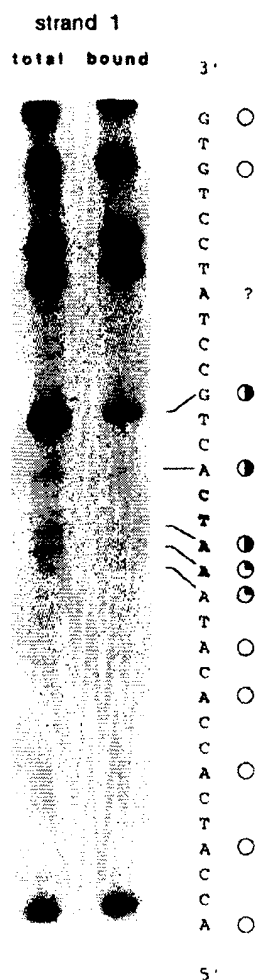
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A



B



Figur 2

A circular black ink stamp from the Office of Intellectual Property (OIP). The text "OIP" is at the top, "JCI 102" is at the top right, "AUG 15 2002" is in the center, and "PATENT & TRADEMARK OFFICE" is at the bottom.

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1 2 3 4 5 6 7 8 9 10 11 12

... ACCATCACCATATA**AATCA**CTGCCCTATCCTGTG...
... TCGTAGTGGTGTA**T****TA**GTCACGGATAGGACAC...
OO ? O OO O ? ●●●●● ? ●●●●● ? ●●●●●

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Figure 2



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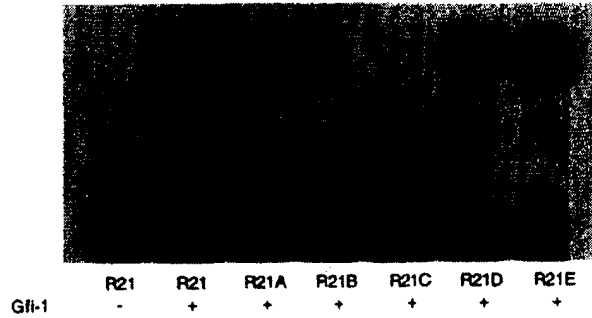
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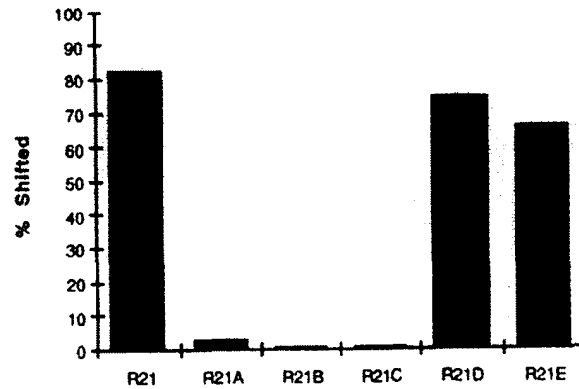
D1

		1	2	3	4	5	6	7	8	9	10	11	12										
R21		C	A	C	C	A	T	A	A	T	C	A	C	T	G	C	C	T	A	T	C	C	
R21A		C	A	C	C	A	T	A	G	A	T	C	A	C	T	G	C	C	T	A	T	C	C
R21B		C	A	C	C	A	T	A	A	C	T	C	A	C	T	G	C	C	T	A	T	C	C
R21C		C	A	C	C	A	T	A	A	A	T	A	C	T	G	C	C	T	A	T	C	C	
R21D		C	A	C	C	A	T	A	A	T	C	A	A	T	G	C	C	T	A	T	C	C	
R21E		C	A	C	C	A	T	A	A	T	C	A	C	T	T	C	C	T	A	T	C	C	

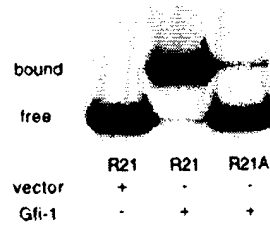
D2



D3



E



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Figure 2



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REC
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A

HCMV MIE Promoter

GCCCGCCTGGCTGACCGCCCAACGACCCCGCCCATTTGACGTCAATAATG

ACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATG

GGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATC

ATATGCCAAGTACGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCC

TGGCATTATGCCCAGTACATGACCTTATGGGACTTTCCTACTTGGCAGTA

CATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTTGGCAGT

ACATCAATGGGCGTGGATAGCGGTTTGACT CACGGGGATTTC CAAGTCTC

Gfi-1 site #1

CACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCA AAAATCAACGGGA

Gfi-1 site #2

CTTTCCAAAATGTCGTAACAACTCCGCCCCATTGACGCAAATGGGCGGTA

GGCGTGACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGT ⁺¹

B

Gfi-1 consensus	TAAATCAC ^A _T GCA
Gfi-1 site #1 (-157 to -168)	GAAATCCCCGTG
Gfi-1 site #2 (-111 to -100)	AAAATCAACGGG

Figure 3

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C

Point Mutations

	<u>Gfi-1 site #1</u>	<u>Gfi-1 site #2</u>
Wildtype CMV	CACGGG GAT TTC.....	AAAA ATC AACGGG
Mutant A	CACGGGGA G TTC.....	AAAA CT AACGGG
Mutant B	CACGGG ACT TTC.....	AAAA CT AACGGG

D

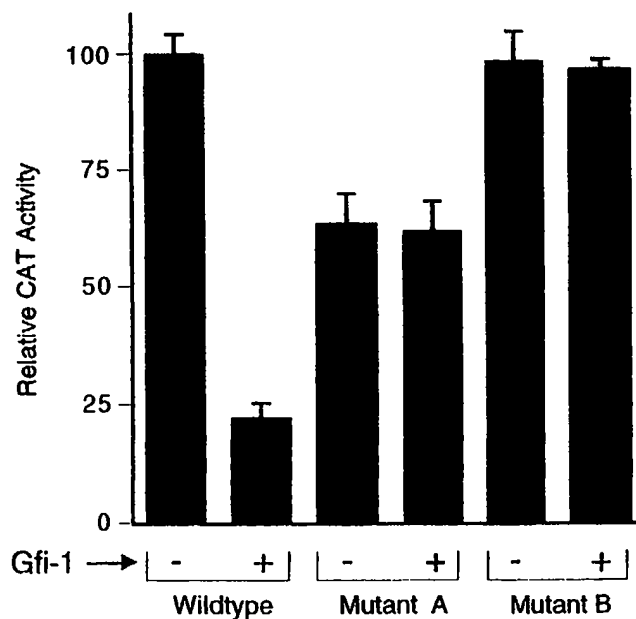


Figure 3



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A

	Gli-1 aa	Binding Site		
		Predicted	R21	
		3'	3'	5'
Finger 1	T	-	-	-
	G	X	-	-
	V	T/C	-	-
Finger 2	H	G	-	-
	S	-	C	G
	Q	A	C	G
Finger 3	R	G/t	G	C
	T	-	T	A
	T	-	C	G
Finger 4	Q	A	A	T
	D	C	C	G
	K	G/t	T	A
Finger 5	Q	A	A	T
	N	A	A	T
	T	-	A	T
Finger 6	R	G/t	T	A
	D	C	-	-
	R	G/t	-	-
		5'	5'	3'

B

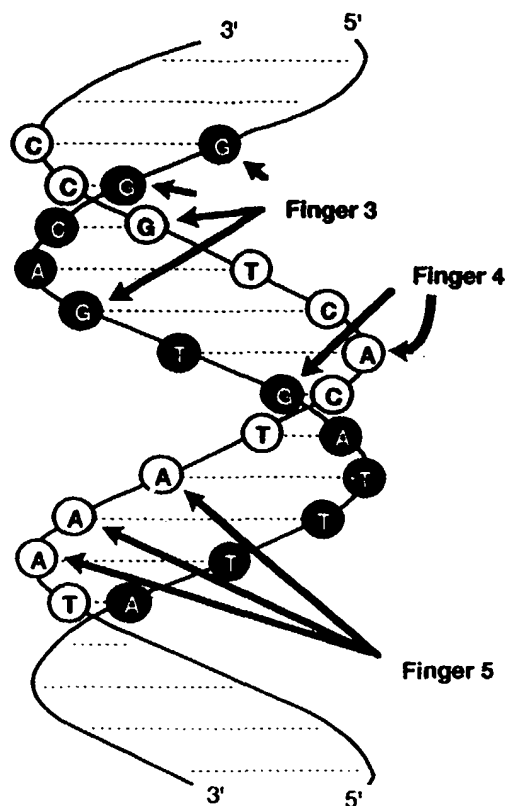


Figure 4